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I.

THE MECHANISM OF THE SKIN.

It must be evident, that, to judge correctly of the property of any body, three things must be required: 1st, an external sensitive organ adapted to the property of the body to be ascertained; 2dly, a nervous cord, to transmit this sensation to the central mass; and, consequently, a central organ, to perceive it. Thus, to complete the office of the senses, three distinct organs are found in all animals where these parts are most numerous and perfect.

An animal deprived of the external senses may be said to live within himself, as he is destitute of all communication with the world around him: to him, color, sound, heat, and cold, give no pleasure, neither do they produce any pain.

This is the permanent state of the lower animals, as the zoophytes and vermes generally, these animals possessing but one rudimentary sense, which is exercised by the imperfectly organized integument covering the body. The senses are, strictly speaking, the most striking peculiarity of animals, and constitute more especially what is termed the animal life, and likewise the life of relation, by which the animal provided with them extends his relations, and lives not only in himself, but in connexion with sur-

rounding bodies. The senses, in the most perfect animals and in man, are five in number; one of them being termed a general, and the remaining four special senses.

The sense of touch or tact is evidently the most general and the most important. It is the most general, since it is not only possessed by all animals, but, in addition, by all parts of every animal. It is uniformly possessed by all parts of an animal body, though one or more of these parts are peculiarly modified, in order to render it better adapted to the perfection and the performance of this sense.

The function of touch is generally considered, by physiologists, under a double point of view—viz., that of tact, which is the general property of all parts of the enveloping integument, and that of touch, which is alone possessed by the prehensile extremity, as the hand of man and the quadrumana. The seat of tact is the skin generally, this function being modified by the different organization of the part in man and animals: its perfection depends upon the delicacy of the skin, on the abundance of its nerves, and on the absence of the insensible parts which cover it. In the mammalia, the skin is always composed of four layers, distinct in their organization and properties. The most internal, or that by which the *tinae dermis* is connected with the

other parts of the economy, is the muscular envelope, the *paunicule charune* of the French anatomists, of which, in man, we have an example in the platysma myoides, dartos, and occipito-frontalis muscles, this muscular membrane being more or less extensively spread over the whole body in quadrupeds, by which a distinct motion is given to any part of the skin.

The first component part of the skin, properly so called, is the derma, cutis, or chorion. It is the thickest and strongest portion of the cutaneous envelope, is the base of its organization, and on the surface of which the other organs are placed. It is composed of condensed cellular tissue, the fibres of which are more or less compact, according to the different parts of the body, being firmer on the posterior surface of the trunk, where the chorion is principally destined for a defence, and more lax on the anterior, where its sensitive property is more strikingly developed. It is in the cells of the tissue of the chorion that earthy salts are deposited, to constitute the crustaceous skins of various echino dermata, as the lobster and asterias. It is this portion of the integument that limits the form of the animal, and gives it those varieties so extensively diffused through nature: whilst the remaining membranes are concerned more especially in the sensitive functions of this apparatus, it is the chorion that protects, as well as gives form and beauty to the subjacent organs. In man it is thin, as he is provided, by means of his reasoning powers, with other means of defence beside those which nature has given him. In several of the mammalia, on the contrary, as the pachydermata of Cuvier, to which order belong the rhinoceros

and elephant, the density of the organization of the chorion enables it to resist a musket-ball. In the invertebrata generally, the distinction in the several portions of the skin is no longer apparent. The interstices in the substance of the chorion, which are more numerous on the anterior than the posterior surface of the body, give passage to the various veins, nerves, and arteries, which are distributed on its surface, and which there form a distinct membrane or body, termed the papillary body, from its being composed chiefly of the papillæ or capillary extremities of the nerves. The capillary body, which is the true seat of sensation, has been subdivided, by Bichat and De Blainville, into another element, termed by them the *resseau vasculaire*, or vascular net-work: this part is the web formed by the extremities of the arteries and veins on the surface of the chorion, and can be rather conceived than demonstrated. It does not appear to be distinct from the papillary membrane or body. This structure is most manifest on the pulps of the fingers in man, on the sole of the foot in the mammalia, and on the lips. The termination of the extremities of the nerves on the whole surface of the chorion, forms a complete nervous envelope (under the epidermis and rete mucosum), which is essentially and solely the seat of touch: the residence of this property never varying, it must be evident that the disposition of the nervous papillæ is similar throughout the whole animal kingdom, the exercise of this function being alike in all, and not varying as the organs of the special senses. The third element of the skin—the rete mucosum, corpus reticulare, or rete glutinosum of Malpighia—is a semi-

fluid expansion covering the whole surface of the body, immediately under the epidermis : it is hardly perceptible in the inhabitants of temperate climates, and in them is so thin that Bichat has actually denied its existence. In the negro races it becomes very apparent, and the layer of pigment is more evident as the color of the skin approaches more and more that of the black. This part of the skin is essentially the seat of color, and is the residence of all those beautiful varieties met with in the skins of animals. Its color is different in almost every order of animals—it is black, brown, grey, white, yellow, green, gold, or silver, or copper color. In the class pisces, the pigment of the rete mucosum is very remarkable, and is productive of the various changes of color in the scales. Not only is the rete mucosum of the negro deeper in color, but it is actually of greater density in this than the other races, its thickness being in direct proportion to its deepness of color. It is so thin and fluid, in the albino, that the sun's rays soon cause vesications; whilst, in the negro, epispastics with difficulty produce this effect.*

The pigment of the skin, or rete mucosum, likewise exists upon a part of the mucous membranes, and, in the eye, on the surface of that vascular expansion of the choroid termed the tunica Ruyschiana.

The pigment of the skin is doubtless produced by the exhaling vessels, and this physiological process has its seat in the vascular expansion, on the surface of the chorion, on the external coverings of the body, and on the membrane of

Ruysch in the eye. There appears to be a direct and constant relation existing between the color of the skin, and the intensity of heat and light to which the animal is exposed. It is certain that the beings who inhabit hot climates, and consequently are exposed to the heat of the sun in all its vigor, are remarkable for that depth and variety of color which is absent in the species dwelling in cold or temperate climates. This difference likewise exists between the fish of the torrid and frigid seas. These facts, however, do not sufficiently explain the true physiological reason of the variety of color in the pigment of the skin. We are better acquainted with the functions exercised by the black pigment of the choroid; this matter, in the eye, is destined to absorb the rays of light which have passed the retina, and which, by a reflection upon it, would disturb and confuse the image pictured there, a false impression of which would be consequently transmitted by the optic nerve to the sensorium. It is probable that the pigments of the eye and skin are analogous in their structure; they appear to be composed entirely of the globules of the blood, rendered black (as they exist in the eye) in the act of exhalation; their various colors being assumed likewise during this process. What proves the identity of the pigments (the cutaneous and ocular) is, that, in the albinos, the absence of the coloring matter of the eye and skin is always uniform: if it be wanting in the eye, it is likewise so in the skin, and *vice versa*; the two always fail simultaneously. The colors of the hairs, feathers, and nails, are due to the presence of the same pigment, which does not differ from the ordinary rete mucosum of the

* Beclard, *Elémens d'Anatomie Générale*, p. 264.

skin. In the albinos, the hairs and nails are invariably white.

The pigment, which is to determine the subsequent color of the skin, is not deposited in its situation till after birth, at least not to any extent. This can hardly be determined in the inhabitants of European climates; but if the skin of a young negro be examined immediately after birth, it will be found that the coloring matter only exists around the roots of the nails: subsequently, it is secreted upon other parts of the body, but first at the roots of the hairs, where the vascular system is in greatest activity; it gradually darkens the whole surface of the skin, and becomes more abundant as the person advances in age. The imperfection and incertitude of vision in young animals, appears to arise from a deficiency in the quantity of black pigment in the eye. In the negro race, the pigment is darkest and in greatest abundance. The Mougolian, or Asiatic race, is frequently denominated the yellow variety, from the predominating influence of this color in the pigment of the skin. The American is likewise termed the red, or copper color, from the same cause; and the European, or Caucasian, the white. We cannot doubt, in examining comparatively the inhabitants of different climates, that light and heat are the principal causes of the variety of color in the rete mucosum. The rays of a tropical sun appear to stimulate the vascular net-work of the skin to throw off an increased exhalation of pigment; and we see, in this climate, that the persons and parts of the body which are habitually exposed, acquire a proportionally darker tint than those which are constantly sheltered and defended. The black pigment is occasionally

deposited under the epidermis in Europeans. A part of the skin may become black, and produce that affection termed "melanism" by Dr. Blainville.* It consists in the ordinary colored integument putting on, over a part of the body (particularly the breasts), the color of the skin of the negro: it occurs, I believe, only in pregnant women. Le Cat and Camper have recorded cases.†—The deposits of the black morbid tissue, termed melanosis, in any of the internal organs, is nothing more than an *error loci*, as it were, of the pigment of the skin, under another aspect or color. The varieties in the color of the pigment, met with in the animal tribe, are almost innumerable; there are as many colors in their integuments, as there are shades in the solar spectrum. These varieties are numerous among the mammalia, in whom the most remarkable are the brilliant blue and red hues on the face of certain baboons. In birds, the brilliancy and difference of color are peculiarly remarkable in the feathers, and rarely in the skin itself; whilst, in all the other classes, the coloring pigment is found immediately under the epidermis. Many of the colors of the animal kingdom are owing to a peculiar refraction of the solar rays, caused by the disposition of the organ from which they are refracted: this is the case principally in the class aves; for if the feather be plunged in water, the color is changed, which would not be the case were it owing to that of the pigment.

The epidermis, to which Blain-

* Cours de Physiologie Générale et Comparée, par Hollard. Paris, 1829-30.

† Le Cat, "Traité de la Couleur de la Peau Humaine," p. 130.

Camper "On the Connexion of Anatomy with Painting," by Dr. Cogan, p. 16.

ville* proposes to give the name of *ceratine corneine*, or *horny matter*, on account of its properties, presents us with an additional number of varieties, which constitute the epidermoid system, or its products and dependencies. We have seen that it takes the name of epidermis when disposed as a covering to the skin, and epithelium when met with upon the internal integuments, or mucous membranes. Besides these parts, it forms all the varieties of hairs, horns, scales, feathers, and, according to some anatomists, the teeth; all these organs resulting from the successive deposition of *ceratine* or *epidermoid* membrane, secreted by the *vasculo-nervous pulp* of the bulb of the hair, feather, or nail.

In the human subject, the hypertrophy of parts of the epidermoidal system constitutes what is termed *ichthyosis*, or *fish-skin disease*; in which the exhalation of the *ceratine* becomes morbidly increased, and resembles the scales of fishes, or the epidermis of *pachydermatous* animals, as the *hog* or *rhinoceros*.

In the *mammalia*, the *ceratine*, or *horny exhalation* of the skin, constitutes the epidermis, the nails, the claws, and the teeth of *cetaceous* animals, and of the *ornithorhynchus* or *duck-billed animal*.

In the *aves*, in addition to the common epidermis and the claws, we find the *ceratine* forming the feathers, the beak or *horny covering* of the mandibles.

In the *reptilia*, it constitutes the scales and *horny prolongations* of the claws.

The bulbs of the hairs, feathers, and nails, are composed, like the *cryptæ*, of *fibrous envelopes* with

open extremities, one admitting the nerves and vessels, and the other giving passage to the excreted portion of the hair or feather. In their passage through the epidermis and pigment of the *rete mucosum*, the hairs carry before them a layer of each of these parts; the epidermis being detached under the form of minute transparent scales, and the layer of pigment carried forward by the point of the hair giving to it its peculiarity of color. A strict analogy exists in the formation of feathers, the nails of man, the hoofs and claws of the *mammalia* and birds, and the scales of fishes: in the single hair, the bulb is likewise single and isolated; but these parts are agglomerated or compound when nail or hoof is to be formed. These garments of animals, from their texture, are bad conductors of heat, and are well calculated for preventing external heat or cold from affecting the animal temperature. The cutaneous appendices of animals likewise exclude moisture (from being oiled), either by unctuous fluids exuding through the skin, or from their being applied to it by the voluntary act of the animal. Nature has given to birds in common, and particularly to those which are aquatic, oil bags for this purpose, which are nothing more than conglomerate *cryptæ* of the skin secreting an unctuous fluid, and opening externally by a common duct. In other instances, the cutaneous appendices are merely weapons of defence.

Such are the principal component parts of the skin; and in reviewing for a moment the numerous functions of which it is the seat, we shall see how important an organ this is in the economy. It is the protecting investment of all the subjacent organs, being the only

* Cours de Physiologie Générale et Comparée, par Hollard.

mode of defence which some animals possess; it likewise gives form and beauty to the various parts of the body. It limits the extent of the animal in space; and to the consideration of this property of the dermis, in which alone it is seated, Dr. Blainville has devoted a whole chapter, in his "*Principes d'Anatomie Comparée.*" The chorion of dermia, then, is the defensive portion of the integument, and is the base of all the rest, as the bulbs of the hairs, and vascular and nervous capillaries, are in it most abundant. Its vitality is more exalted than that of any other part of the economy. The papillary body covering the cutis is the seat of tact or touch; the rete mucosum the residence of the infinite varieties of color; and the epidermis deadens the irritation produced by the contact of foreign bodies, which, without its presence, would be carried to such an extent as to produce pain, were those bodies applied directly to the denuded extremities of the papillæ. Besides these properties, the cutaneous investment is the seat of absorption and excretion, and accessory organ of respiration, throwing off a certain proportion of carbon, and taking up a proportionate quantity of oxygen. Thus the skin transpires and absorbs; is the protecting investment of the body; is the seat of touch and color. It is through the external integuments, and their continuation (the mucous membranes), that every substance must pass into, or out from, the internal organization of the body. There is scarcely a point of its surface unprovided with the extremity of a nerve, an artery, a vein, an exhaling and an absorbent vessel.

II.

ON LITHOPLATOMY.

By M. S. BUCHANAN, M.D., &c.*

CASE I.—Mrs. Grant, aged 50, of full habit of body and lax fibre. Has been subject, for many years, to calculous complaints, but, till lately, would never submit to examination. On the 29th of July last, was admitted, under my care, into the Royal Infirmary, and calculi of various sizes with ease detected lying at the neck of the bladder. In addition to the usual symptoms attendant on this painful disease, she had the most complete incontinence of urine I ever saw, the bladder having become much contracted, its coats thickened and constantly discharging white ropy mucus from its internal surface. Extensive excoriation of lymphæ, labia, nates, and thighs, was the consequence, and considerable paralysis of inferior extremities had of late rendered her a most pitiable object. Immediately on admission, I ordered her bowels to be well opened, anodyne injections to be administered, and the warm bath to be used; and on the 3d day of August, with consent of consultation, I dilated the urethra with Weiss' instrument, and extracted, with the aid of a small pair of forceps, three stones, two of them about the size of filberts, and the third about the size of a walnut. She experienced little pain during the process of dilatation, which occupied about seven minutes. The incontinence of urine, and consequent excoriation of nates, &c., in a short time disappeared; and when

* Abbreviated from the Glasgow Med. Journal.

she left the house, about three weeks after the operation, she could walk from one end of the ward to the other without assistance, her general health having at the same time greatly improved.

CASE II.—Robert Brock, a gentleman's servant, was admitted, under my care, into the Infirmary, on the 11th of August last. At that time a stone could be felt in the urethra, a little anterior to the bulb. It had advanced thus far about a fortnight previous to admission, and from its position now caused excruciating pain. He stated, that from his infancy he had labored under symptoms unequivocally indicating stone in the bladder, but till lately would not consent to be sounded. This operation was repeated with great care by several surgeons in this city, some months previous to admission, without any stone having been detected; and various means were also adopted, the fortnight prior to the 11th instant, to get the stone dislodged from its situation in the urethra, by the introduction of catheters and bougies of the largest size, to the spot where it seemed sacculated; and also by the trial of various kinds of urethral forceps, assisted by the warm bath, &c., but all to no purpose. The gentlemen who met in consultation on his admission, were so convinced that no further trials of the above kind would succeed, that he was immediately placed on the operating-table, secured as for lithotomy, a grooved staff introduced as far as the stone, and with one stroke of the knife the urethra was incised to the proper extent, and the stone extracted. The operation was the affair of a moment, and was so free of pain that the patient seemed astonished at having handed to him

the cause of all his misery. The stone measured two inches and eight lines in its largest circumference, and one inch and ten lines in its smallest; it was convex on its one side, and flat on the opposite, with a small nodule in the centre of this last, indicating that it was the smaller segment merely of a larger stone, which must still be in the bladder. This was made more evident, not only from the very sharp edge of the flat surface above described (which had very much the appearance of having been recently broken), but also from the concentric layers of lithic acid, which were observed when sawn through its largest diameter by the lathe. On the 14th, the wound in the perineum was completely healed, and no symptoms of calculus remained. He has been frequently sounded since, without any stone having been discovered, and, in consequence of feeling in every respect well, he was dismissed cured.

Query 1st. Is there any instance on record in which a stone of such dimensions was passed thus far into the urethra from the bladder?

2d. In what manner shall we account for the section or fracture of this stone in the bladder, no instrument having at any time detected it till its exit from this viscus?

3d. Why is the alleged remaining half unable to be discovered by the most careful sounding, as the first was, previously to its escape from the urethra?

But if, notwithstanding all that has been advanced, it is denied that the male urethra is capable of dilatation in the manner suggested, another method remains to be discussed, of more importance by far than any to which I have hitherto

adverted, and to which I am inclined more particularly to apply the term lithoplatomy.

The operation I allude to is that by which the male urethra is converted into a female one, and thus the difficulty and danger of both lithotomy and lithotripsy is at one step superseded by lithoplatomy.

For the purpose of effecting the first part of this operation, the patient must be secured as for lithotomy; a grooved staff is introduced into the bladder; the membranous part of the urethra near the prostate incised, to the necessary extent, to admit the lithoplatome; and then, having withdrawn the staff, the operation of dilatation of the remaining part of the urethra, prostate, and neck of the bladder, will be, with nearly the same ease, safety, and effect, accomplished, by means of my lithoplatome, as in the female.

That there are many objections to the above method of operating for stone, I must at once admit; and until I can give it a fair trial on the living subject, I shall not contrast it either with lithotomy or lithotripsy,—judging, however, from what I have already experienced in the female urethra, and, on the dead subject, in the male, I am not the least afraid of the result. I shall only add further, that if the operation of lithoplatomy does come up to my expectations, and that of many judicious and talented surgeons here, to whom I have mentioned it, how much will suffering humanity be relieved, and the labors of the surgeon facilitated.

But lest it should be said that the operation of lithoplatomy which I have above described, and so strongly recommended, is nothing more than the apparatus major, the Marian method, that of Le Cat,

Le Dran, or Pajola, let any one take a glance at these methods of operating, and the difference must at once strike him. It would extend this communication too much to enter at large on this interesting subject, which, at some future opportunity, I intend to resume; but I must be allowed to say, that, in investigating the writings of a vast number of lithotomists, both ancient and modern, I can find nothing which, in the smallest degree, approaches to the operation I have above described. It is the principle, I once more repeat, of *slow and continued dilatation*, by the *instrument* which I have recommended, applied to the *whole*, or a *small part*, of the *male urethra*, for the extraction of calculi, which alone constitutes my improvement of this part of surgery.

In stricture of the urethra, could a very slender lithoplatome, introduced through the constriction, not be made to overcome this more safely and more speedily than either the simple or armed bougie, or conical sound? If the instrument cannot be passed through the spasmodic, or organic contraction of this canal, could it not, by its introduction as far as the stricture, and kept steadily in its place, be made, by gentle dilatation, to overcome this disease? or at least allow of armed bougies, or sounds, being more safely made to act in accomplishing their object?

III.

MR. HALSTED AND HIS CURE FOR DYSPEPSIA.

*To the Editor of the Boston Med.
and Surg. Journal.*

SIR,—Like most things in this imperfect world of ours, Mr. Hal-

sted's book seems to be of chequered complexion, good, bad, and indifferent. Which of these three qualities predominates, will be best determined after a little examination.

Mr. H. assigns two causes of dyspepsia, the one existing within the stomach, the other external to it. The first is a torpor or relaxation of the fibres of the organ, by which it is rendered incapable of performing its proper function of contracting on the food. The second is an undue rigidity of the abdominal muscles, which press on the bowels, and interrupt their peristaltic action, causing, at the same time, constricted thorax, and, consequently, impeded respiration. It is on the indications suggested by these two causes that his plan of treatment is founded. The first of these indications is to apply relaxants to the abdomen, in order to relieve the spasm of the muscles; and the second is to employ other mechanical means, having for their object to increase the sensibility of the gastric surface, and thus to enable it to act on the ingesta in a proper manner.

Now I should differ from Mr. H. in the main points of his theory, and think that the success of his practice, which I am willing to admit, can be better explained by a different view of the subject. In the first place, I cannot admit that a spastic state of the abdominal muscles is the usual proximate cause of dyspepsia; and this for the plain reason, that the remote causes of this disease, which are too familiar to be enumerated, are not such as are calculated to produce such an effect on these muscles. What, I would ask, have the ordinary causes of indigestion to do with the abdominal muscles, more than with the muscles of the

back or the extremities? Certainly nothing; and therefore, unless careful observation has shown that dyspepsia is usually preceded by the symptom in question, distinctly marked, we are not authorized to set it down as a cause. That it is so preceded, we have, indeed, Mr. Halsted's authority for believing; but till this shall be confirmed by some corroborative testimony, we seem to be hardly justified in admitting it as a settled principle, however sincere may be the conviction of Mr. H. himself. It is also to be remarked, that if the relation of these occurrences as cause and effect were as permanent as he considers it, it would happen that, in those diseases in which spasm of the voluntary muscles is an essential symptom—such especially as tetanus, in which very violent contractions of the abdominal muscles take place—gastric irritation would be a uniform concomitant; but it does not appear that this is the fact. Again, it is not true that the constipated state of the bowels alluded to by Mr. H. is accounted for by a reference to this cause, and the dyspnoea, which might fairly result from it, is, unfortunately, not a common symptom of the disease.

Secondly, I cannot agree to Mr. Halsted's opinion, that a deficient sensibility of the stomach is a common or even a frequent cause of the disease in question; the position, if not false, is at least too sweeping and general. There is no doubt that the food is the natural stimulus of the stomach, by the presence of which its muscular fibres are excited to contraction; and there is reason to believe that when the organ has been unduly stimulated by the frequent introduction of excessive quantities or

improper articles of diet, a state of atony may succeed, in which it may refuse to act on its contents unless the wonted stimulus be furnished. Such a state of stomach is admitted as possible by all who have written on this subject; and, when it exists, should be met by appropriate remedies. In this state, it is probable that the organ is less sensible to the external touch. There are, however, circumstances which show that this state of the stomach is not always that which gives rise to dyspeptic symptoms. In fact, any cause which produces gastritis or inflammation of the stomach, more or less acute, must necessarily impair the function of the parts. Now there are many cases in which this subacute gastritis appears to be present, producing the dyspeptic affection. The remote causes of this species of the disease are numerous, and many of them common to it with the other; among those which are peculiar may be mentioned external pressure, which frequently produces the disease in females. Now in this species, the sensibility, instead of being diminished, is uniformly increased—so that often the slightest pressure on the external surface gives excessive pain. In these cases, any treatment which had for its object to increase the gastric sensibility could not fail of doing harm.

It will however appear, on examining Mr. H.'s practice, based as it is on the views above alluded to, that what we have regarded as the errors of this theory, must, in practice, tend to neutralize each other, and thus, like two negatives in algebra, to produce a positive result. In truth, the very treatment which he recommends for removing the spastic state of the

muscles—namely, the external use of cataplasms and fomentations—is exactly that which has been found most useful in the various forms of gastritis; and his great principle that this tenseness must be removed before any other applications can be made, amounts practically to this—that the gastritis must be cured before stimulants can be admissible; which we hold to be undeniable. As respects his mode of stimulating or giving tone to the stomach—namely, by pressing up the abdominal contents against the fundus of this organ—the idea is certainly ingenious, and the process well worth a fair experiment in impartial hands; although, notwithstanding Mr. H.'s care to distinguish the process he employs from rubbing, kneading, and shampooing, it is not so obvious that the effects thus produced may not depend on a similar principle, and that the exercise of muscle given to the patient when operated on, and that which he is forced to take when repeating the process on himself, may not have a share in bringing about these marvellous results. Mr. H., however, has now dealt fairly by the public, as well as the profession, in boldly stating his belief and his practice. He deserves, at least, in return, an impartial hearing, and that the merits of his remedy be put to the test of fair and candid experiment.

Yours, &c.

MEDICUS.

MEDICAL JOURNAL.

BOSTON, FEBRUARY 22, 1831.

DEATH OF DR. WELSH.

It becomes our melancholy duty to record today, the death of Dr. Thomas Welsh, the father of the Boston

Faculty. Dr. W. was an active Surgeon in the American army during the revolutionary war, and, in this capacity, ministered to the wants of the wounded in the battles of Lexington and Bunker Hill. He subsequently enjoyed an extensive practice in this town; was attached to the U. S. Marine Hospital at Charlestown; and, more recently, performed, with fidelity and success, the arduous duties of Quarantine Physician to this port. As one of the Consulting Physicians to the Hospital, to the City and the Medical Dispensary, as a Counsellor of the Massachusetts Medical Society, as a member of the Faculty, as a physician and as a friend, he discharged ably his several duties, and was greatly respected, during a course of multiplied years. In each of these relations his loss will be deeply felt, now that he has relinquished them all for another and a greater, at the advanced age of four score years.

EFFECT OF COLD ON THE ANIMAL ECONOMY.

WE know of no subject which presents more interest, at the present season, than the influence on the state of the human system, fairly attributable to the direct action of cold. The temperature during the last six weeks has, we believe, been constantly, or with a rare exception, below the freezing point of Fahrenheit's thermometer, and in the course of every day, during that time, the mercury has been ten degrees below that point. The extreme of cold has not perhaps been quite so great

as in former seasons; but such a steady continuance of cold weather has, of late years, been unusual, and we hear it generally acknowledged a severe winter. It will not, then, we trust, be thought useless or ill-timed, if we offer some general considerations to our readers on the physical effects of an agent, the sensible qualities of which we have so amply tested.

Setting aside the question whether cold is a positive or negative quality, which is hardly more than a dispute about words, we find the great point in controversy respecting it to be, whether its direct effect on the system be stimulant or sedative—whether it tend to render the vital powers more active, or to impede their operation. The authority of great names might be adduced for both these opinions; and, as it happens with most of these controverted points, neither can be admitted without considerable qualification. It seems probable that whenever the degree of cold is such as to produce pain, it acts as a sedative on most of the animal functions—diminishing the cutaneous transpiration, rendering the circulation more feeble, impeding respiration, and impairing the digestive process. The maximum temperature at which this effect can occur, it is almost impossible to determine, since it varies with the constitution, the degree of health, and the previous circumstances, of each individual. It may be, and often is, produced, when the mercury stands at 40, 50, 60, or even 70 deg. of Fahr., if the circumstances are such as to render the body peculiarly sus-

ceptible. To persons in good health, and tolerably clothed, the cold is scarcely sensible as an evil, provided the air be dry above 45 deg. Fahr. From this, down to 20 deg., we have a range of moderate cold, to the influence of which an individual being subjected, in the open air, without exercise, and without extraordinary covering, will experience various grades of suffering, from slight inconvenience to severe pain; and it is within these limits that we conceive cold to be capable of acting as a sedative, when not resisted. That it is resisted and its injurious effects overcome within these limits, our daily observation and experience are convincing us; since, at the higher temperatures included within them, it requires only moderate exercise in the open air to quicken the circulation, to produce a free action on the skin, and to render the cold a source of delightful sensation. At the lower grades mentioned, this effect is attained with more difficulty, and only by more active exercise or increased clothing. Throughout all this range of temperature, a comfortable warmth is easily maintained in our apartments, without double windows, air-tight doors, Lehigh grates, or Russian stoves: the hovels of the poor, provided they have fuel, are about as comfortable as the parlors of the rich; the simple precautions of shutting the doors and mending the broken panes, being quite sufficient to secure them from the external air. Below this point, or from 20 deg. to 0, which with us is virtually a maximum of cold, the inconveniences arising from this cause

become more serious. The poor pass shivering through the streets, in insufficient or ill-adjusted garments, while the rich are scarce protected, while walking, by their cloaks and overalls. The former hang, half warmed, over their ample fireplaces; while the latter find, in various forms, the evils of parting with 60 deg. of caloric, in passing from their apartments into the external air. A sense of stricture and difficulty of breathing are experienced on going into the external air, and equally unpleasant sensations are felt when the change is reversed. The extremities, exposed for a few moments to the air, are affected with a painful sensation, are soon benumbed, and, without protection, frozen. The head, in many persons, suffers from the same cause; and exposure, for any length of time, to the cold, produces severe pain in that part. Even to these degrees of cold, however, judicious clothing and exercise, whether singly or combined, will maintain, for a considerable period, an effectual resistance. The limit of preservative power in the former, however, seems much more narrow than that in the latter. The drivers of stage coaches, notwithstanding every precaution in respect to clothing, are often frozen on their seats; while, in the same temperature, we see our sawyers in the streets plying their hardy occupation, with a single thickness of flannel, and another of cotton, to protect the back and chest from the chilling atmosphere.

We have briefly adverted to the more familiar effects of cold, because we think that they go to illustrate the general doctrine above stated—

namely, that the influence of this agent is of a sedative character, or opposed to the activity of the vital functions. In virtue of this character, severe cold checks the perspiration, renders the circulation more feeble, impedes digestion, constipates the bowels, and disposes to torpor and sleep. By this view of its effects, seems to be explained the apparent anomaly, that severe cold, though a cause of death, is not an active agent in the production of disease. While the bills of mortality tell of the aged, of infants, of the paralytic, and those affected with chronic disease, being suddenly swept away in these severe periods, we may remain almost exempt from inflammatory disease, and hear on all sides the expression of surprise that so severe a season should be so healthy. In truth, the inactivity which results from the temperature, is displayed in morbid as well as in healthy operations. Even pulmonary complaints, which the season would more particularly lead us to expect, are of rarer occurrence in the severest weather, than when the temperature has begun to soften. On the other hand, the diseases which are overtaken by severe cold are uniformly rendered more tedious. Fever becomes typhous; accidents lead to protracted confinement; and slight injuries, which, in mild weather, would be wholly unimportant, are found, under these circumstances, both obstinate and troublesome.

It has been also remarked, that, after a long-continued period of cold, fever will assume an intermittent type, and imitate perfectly the ter-

tians and quartans arising from marsh miasmata; thus showing how, under the operation of causes precisely opposite, the system may be affected in the same manner. This remarkable observation was made by M. Foderé, during the severe winter of 1829—1830 in Strasburg. For one month, during this season, the temperature ranged from 0 to —15 deg. Fahr.; although it appears, from M. F.'s statement, that the season is not usually colder than with us. The effect of this intense cold on sickness and mortality, was very similar to that above stated. In a population about equal to our own, the month of January, 1830, presented a mortality of 222; while, in the same month of the year preceding, the number of deaths was 167. Yet disease of inflammatory character was rare; very little of true pneumonia was developed, and scarce a cough was heard. The power of the cold, however, was fatally manifested, in repeated instances, in the production of asphyxia, with which several individuals were seized on going into the air. In one of these cases, which occurred without any evidence of previous intoxication, the only morbid appearances detected after death were unusual redness of the mucous surface of the stomach, and injection of the capillaries with dark-colored fluid blood. It is also mentioned that, in the military hospital, a window having been left open near an individual recovering from a wound, so that the cold air came in contact with the granulations, severe tetanus was the consequence of the exposure.

The cold with us is not often intense enough to produce similar results; but the direct effects of our severest weather are sufficiently striking, and well deserve the attention of the philosopher and pathologist.

TREATMENT OF SCARLATINA.

In a clinical lecture recently given at St. Thomas's Hospital, London, by Dr. Elliotson, that gentleman extols, in high terms, the use of cold and tepid ablution in scarlatina. He prefers ablution to affusion, for the simple reason that it is equally efficacious and less troublesome; and his preference of the cold or warm water, is governed by the feelings and preference of the patient. Dr. E. remarks that he has *always* used the ablution, in this disease, where the heat has been permanently above 98, or even where the patient has said he felt hot, and the skin was dry; and that he *never* yet lost a single case.

It is a notion of some French physicians, that the local or general dropsies which often succeed recovery from scarlatina, are the result of the external use of cold water in its treatment. This may doubtless be the case where such remedy has been adopted at improper times, and applied without judgment and caution. But the free and frequent daily use of cold ablution, where the skin is preternaturally hot and dry, is unquestionably a perfectly safe and extremely effectual agent in the cure of scarlet fever: the immediate relief and comfort it gives the patient, is almost indescribable; and

there is no more reason to suppose that its remote consequences are injurious, than that those frequent sequelæ of this disease are owing to the purgatives or venesections which are in the course of almost every physician's practice, in this and every other febrile complaint. They are certainly not oftener met with of late years, than they were previous to the publication of Dr. Currie's work, although the external application of cold was extremely rare, in this disease, before its benefits were unfolded and directions for its use given by that distinguished author.

"Abstinence from food," adds Dr. Elliotson, "is of the greatest importance: in this disease, you should give nothing but tea, barley water, and similar diluents. Bleeding generally, but particularly locally, from the head, throat, chest, or abdomen, is sometimes required. When the throat is affected, you will find that one of the most useful applications is the chloride of soda or lime. This was used, in this instance, around the bed; but you will find it one of the most serviceable gargles that you can employ. You must remember, however, that children cannot gargle the throat, and sometimes adults are in such a state that gargling is out of the question; and you must then apply it by means of a syringe, squirting it all over the mouth and fauces. This should be done every hour or two. The solution should be diluted, so as not to produce pain; and I have continually employed it now for the last two or three years, and certainly with the most beneficial effect. It comforts the patient; it causes the ulcerations to assume a healthy appearance, and throws off the sloughs. It is of great use, also, to employ the chloride of soda or lime about the bed; but the latter is generally used for these external

purposes. It would appear that the chlorides of lime and soda have a tendency to destroy contagion; and, on this account, I sprinkle it upon the bed-clothes, have it thrown upon the removed linen, and place it in saucers around the bed, and introduce it into the vessels which are used by the patient for the purposes of nature. Were it only to lessen fetor, its use in every sick room, in the latter mode, is a great comfort. I adopted the practice in this case, because I know that this is an infection which is particularly apt to spread, and so many children are always in the hospital. I recollect the circumstance of a patient being admitted into a ward with scarlet fever; and children and young men in that ward, for nearly two years afterwards, were continually seized with scarlet fever, notwithstanding the hospital is thoroughly white-washed and cleansed once a year.

"Where malignant symptoms come on, it may be necessary to use the treatment that is adopted for typhous fever, remarking, however, that it is frequently necessary to apply leeches in this form of the disease, on account of local internal inflammation. There is, however, another thing to be remembered in connexion with this affection—that, after it has gone through its stages, the patient is very liable to dropsy. It is a singular circumstance, but one well established, that, after scarlet fever, children are apt to become anasarcaous—nay, sometimes more than anasarcaous—to have effusion into the head, chest, or abdomen. I believe this occurrence takes place much more frequently in winter and cold damp weather, than at any other time. Hence, allow me to repeat, that however proper cold affusions, or cold ablution, may be, when the temperature is above the natural

standard—yet, when the heat is not above the natural point, and after the disease is over, there would be the greatest danger, no less than perfect inutility, in their application."

We have understood that this disease is peculiarly rife, and fatal, in Bristol and Essex Counties, and some other parts of this State. Will not some of the profession, who have witnessed its ravages, enlighten us respecting the peculiar form it has assumed, and the apparent circumstances in the disease which lead so rapidly to a fatal termination.

Camphor.—Libri has mentioned a curious circumstance regarding odoriferous bodies, such as camphor; that if they be exposed to a current of electricity for a considerable time, their smell diminishes, and at last disappears entirely. After a lapse of time, camphor again recovers the power of emitting odors.

Edinb. Journ. of Science.

Economic Lighting.—At the Tulloch bleachfield, a young man, named A. Reed, has constructed an apparatus, by which he is enabled to procure from the wood, which they are in the practice of burning, in order to obtain acetic acid, gas sufficient to light the whole premises. By this ingenious device, a most important saving is effected—since no more wood is necessary for both the gas and the acid, than was formerly used for the acid alone.

Quackery.—Another bill for man-slaughter has been found, in England, against the famous St. John Long.

Whole number of deaths in Boston the week ending Feb. 11th, 25. Males, 16—Females, 9. Of consumption, 8; inflammation in bowels, 1; lung fever, 3; dropsy in brain, 3; intemperance, 1; rupture of gall-bladder, 1; palsy, 1; unknown, 3; old age, 2; spasms, 1; suicide, 1.

ADVERTISEMENTS.

COPARTNERSHIP NOTICE. The subscribers have formed a connexion in business as **CHEMISTS, DRUGGISTS & APOTHECARIES**, at Apothecaries' Hall, No 188 Washington Street, opposite Marlboro' Hotel, under the firm of **JARVIS & PEIRSON.**

**NATHAN JARVIS.
GEORGE W. PEIRSON.**

EUROPEAN LEECHES.

J. & P. have a few fine European Leeches—to the application of which, when directed by Physicians, they will attend without any additional charge.
Feb. 8.

NEW MEDICAL BOOKS. This day received by **CARTER, HENDEE & BABCOCK**—Treatise on Surgical Anatomy. By **ABRAHAM COLLES**, one of the Professors of Anatomy and Surgery in the Royal College of Surgeons in Ireland, &c. &c. 2d Am. Ed., with notes, by **J. P. Hopkinson, M.D.**

Manual of Pathology, containing the Symptoms, Diagnosis and Morbid Characters of Diseases, together with an Exposition of the different Methods of Examination applicable to Affections of the Head, Chest and Abdomen. By **L. MARTINET, D.M.P.** Translated, with notes and additions, by **JONAS QUAIN, A.B.**

Pathological and Practical Researches on Diseases of the Brain and the Spinal Cord. By **JOHN ABERCROMBIE, M.D.**
Feb. 8.

WILLIAMS ON DISEASES OF THE CHEST. This day received, by **CARTER & HENDEE**, "A Rational Exposition of the Physical Signs of the Diseases of the Lungs and Pleura, illustrating their Pathology and facilitating their Diagnosis." By **CHARLES J. B. WILLIAMS.**
Dec. 6.

BECLARD'S GENERAL ANATOMY. **CARTER, HENDEE & BABCOCK** have this day received—Elements of General Anatomy, or a Description of every kind of Organ composing the Human Body. By **P. A. BECLARD**, Professor of Anatomy of the Faculty of Medicine of Paris. Preceded by a critical and biographical Memoir of the Life and Writings of the Author. By **OLIVIER, M.D.** Translated from the French, with Notes. By **JOSEPH TOGNO, M.D.**, Member of the Philadelphia Medical Society.
Dec. 28.

SURGICAL INSTRUMENTS AND CHEMICALS. Students in want of the above articles, would do well to call, before purchasing, at **BREWER & BROTHERS'**, Nos. 90 and 92 Washington Street—Boston. Oct. 15. ep3m

GERMAN LEECHES. **RICHARD A. NEWELL**, Druggist, Summer Street, respectfully informs the Physicians and Public generally, that he has just received a fresh supply of the above-named *Leeches*, which will be sold at a *fair* price.

N. B.—Leeches sent to any part of the city, and applied, without extra charge, by day or by night.
6w—Nov. 8.

ABERCROMBIE ON DISEASES OF THE STOMACH. Just received by **CARTER & HENDEE**—Pathological and Practical Researches on Diseases of the Stomach, the Intestinal Canal, the Liver, and other Viscera of the Abdomen. By **JOHN ABERCROMBIE, M.D.**, Fellow of the Royal College of Physicians of Edinburgh, &c., and first Physician to his Majesty in Scotland. Sept. 28.

SURGEON DENTIST'S MANUAL. Just received, by **CARTER & HENDEE**, The Surgeon Dentist's Anatomical and Physiological Manual. By **G. WAITE**, Member of the Royal College of Surgeons.
Nov. 2.

Published weekly, by **JOHN COTTON**, at 184 Washington St. corner of Franklin St., to whom all communications must be addressed, *postpaid*.—Price three dollars per annum, if paid in advance, three dollars and a half if not paid within three months, and four dollars if paid within the year. The postage for this is the same as for common newspapers.